Age and Interviewer Behavior as Predictors of Interrogative Suggestibility

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Objective. The main objective was to explore the influence of interviewer behavior—abrupt versus friendly—and the age of participants on interrogative suggestibility.

Method. The study involved 42 young adults and 50 elderly participants. The Gudjonsson Suggestibility Scale 2 was used. Data analysis involved a 2-factor between-subjects design (interviewer behavior × age) and mediation analysis.

Results. The scores of elderly participants were significantly lower than younger adults on memory indices and significantly higher on some suggestibility indexes. Some suggestibility indices in the abrupt experimental condition were higher than those in the friendly experimental condition. Elderly participants who were interviewed under the abrupt condition were more likely to change their answers after receiving negative feedback than younger adults. Memory quality was a mediator of the relationship between age and the tendency to yield to suggestive questions. Self-appraisal of memory was a mediator between both age and interviewer behavior and the tendency to change answers after negative feedback.

Discussion. Mechanisms of the relationship between age, interviewer behavior, and suggestibility are discussed on the basis of the mediational analyses. The findings suggest that a friendly manner should be adopted when interrogating witnesses.

Key Words: Age differences—Elderly—Interviewer behavior—Social influence—Suggestibility.
The basic idea of the GSS is that the participant answers a series of questions containing misleading suggestions and is then scored according to the number of answers he/she can give that are consistent with suggestions imbedded in the questions. The participant is then given negative feedback about his/her performance, after which all of the questions are repeated. The number of changed answers indicates how prone the participant is to changing their answers after receiving negative feedback. (The details of this procedure are described in the Materials section.)

Social factors are crucial in determining interrogative suggestibility as is evidenced by the previously mentioned description of the Gudjonsson and Clark (1986) model and the procedure of the GSS (Gudjonsson, 1997). As a result, one of the main aims of the research presented in this article is to examine interrogative suggestibility by measuring the influence of interviewer behavior on suggestibility. In addition, the differences in interrogative suggestibility between elderly and young adults will be explored, as well as the interaction between the age of interviewees and the behavior of the interviewer.

Suggestibility of the Elderly Adults

The literature on the mnestic suggestibility of elderly people is limited. Most of the research on this topic has examined the effects of misinformation on the memories of eyewitnesses by typically allowing participants to watch a video clip, then exposing them to misinformation about its content, and finally asking them to answer questions about the clip. For example, Cohen and Faulkner (1989) presented video clip, showing a kidnapping, to younger (mean age 34.9 years) and older (70.4 years) participants. After 10 min, participants read a description of the video clip, which, for those in the relevant experimental condition, contained misinformation. Finally, the participants answered multiple-choice questions about the clip, including questions relating to issues about which the description had included misinformation. Elderly participants were more often misled by the misinformation than were the younger adults. Several other experiments of this kind have reported similar results (Cohen & Faulkner, 1989; Karpel, Hoyer, & Toglia, 2001; Loftus, Levidow, & Duensing, 1992; Mitchell, Johnson, & Mather, 2003; Mueller-Johnson & Ceci, 2007) although exceptions have also been reported (Coxon & Valentine, 1997; Dodson & Krueger, 2006).

The aforementioned research was conducted in the experimental eyewitness paradigm. We are aware of only one study (Polczyk et al., 2004) in which GSSs were used to study the suggestibility of elderly people in the individual differences paradigm. In that study, elderly individuals (mean age 64.1 years) were more prone to accept suggestions embedded in misleading questions than younger adults (mean age 22.3 years). No significant differences in the tendency to change answers after negative feedback were detected between both groups. The scarcity of studies that explore the interrogative suggestibility of elderly adults was the main reason for conducting the present research.

The Role That Interviewer Behavior Plays in Suggestibility

The second aim of the study presented herein is to explore the effects of the behavior of the interviewer on the suggestibility of both younger and older adults. The studies that relate to this issue focus only on younger adults. For example, Bain and Baxter (2000) and Baxter and Boon (2000) manipulated the behavior of the interviewer (abrupt vs. friendly) during the procedure of producing the GSS. The results indicated that the participants in the abrupt condition changed their answers more often than those in the friendly condition.

Baxter, Jackson, and Bain (2003) explored the interaction between self-esteem, interviewer behavior, and GSS scores using the same procedure. No significant effect was found for the friendly/abrupt factor, but participants with lower self-esteem were more suggestible on all indices of interrogative suggestibility.

Somewhat different results were obtained by Bain, Baxter, and Fellowes (2004), who found that lower self-esteem resulted in a higher index of changed answers but had no effect on whether participants yielded to suggestive questions. Participants in the friendly condition also yielded to suggestive questions less often than did the participants in the abrupt condition. Nonetheless, interviewer behavior had no impact on the tendency of participants to change their answers after receiving negative feedback.

Bain and colleagues (2004) explain the discrepancies between experiments by reference to the way in which the interviewer was perceived by participants in the different studies. They suggest that the greater the difference between the abrupt and friendly conditions, the more social influence is assigned to the interviewer and the greater the pressure on the participant after feedback has been given.

Aims and Hypotheses

As stated previously, very few published studies investigated the differences between elderly and younger adults in relation to interrogative suggestibility, and no study has hitherto explored the impact of interviewer behavior on elderly participants. Therefore, the aims of this study were twofold: first, to compare the interrogative suggestibility of elderly and younger adults, and second, to explore the influence of interviewer behavior on interrogative suggestibility in both elderly and younger adults, as well as the interaction between the age of interviewees and the behavior of the interviewer. In addition to this, mediational analyses were planned, as described in detail subsequently. For these analyses, age and interviewer behavior were predictors, memory quality and self-appraisal of memory were mediators, and interrogative suggestibility was the
dependent variable. The impact of age and behavior of the interviewer on self-appraisal of memory and memory quality was also checked.

The following hypotheses were formulated:

1. Elderly participants will more often accept misleading suggestions embedded in questions than younger participants. The main reason for this hypothesis is that memory deteriorates with age, and poor memory quality is an important prerequisite for accepting suggestions, as stated previously. Thus, we postulate a mediation: age will affect memory quality, which in turn will affect the participant’s tendency to yield to suggestive questions.

2. Elderly participants will more often change their answers after receiving negative feedback than younger participants. We assume that elderly persons have a lower confidence in their own memory (cf. Dodson, Bawa, & Krueger, 2007). This, in turn, should lead to higher uncertainty, which is one of the premises for interrogative suggestibility. We assume that uncertainty is especially important when one receives negative feedback. Again, we postulate a mediation: age will affect self-appraisal of memory, which in turn will influence the tendency of the participant to change their answers after receiving negative feedback.

3. We expect to see a marked increase in the tendency to change answers between the friendly and the abrupt conditions. We assume that the abrupt manner of the interrogator will negatively affect the participant’s self-appraisal of memory. In turn, lower self-appraisal of memory should enhance susceptibility to negative feedback. Thus, a third mediation that we postulated is that interviewer behavior will influence the self-appraisal of memory, which in turn will affect the tendency of the participant to change their answers after receiving negative feedback. An important assumption for the previously mentioned mediational hypotheses is that actual memory quality influences the tendency to yield to suggestive questions (Yield), and that subjective perception of one’s own memory performance affects the tendency to change answers after negative feedback (Shift). It should be so, because Yield reflects mnestic suggestibility, which is well known to correlate with memory capacity (Gudjonsson, 2003). On the other hand, Shift is less dependent on memory and more on self-confidence concerning the memory, which, according to our assumptions, is lower in the case of elderly persons. The assumption that actual memory capacity is connected more with the tendency to yield to suggestive questions than to changing answers as a result of negative feedback is supported by existing findings (Gudjonsson & Clark, 1995; Polczyk et al., 2004; Richardson & Kelly, 1995). If these assumptions are tenable, then the correlation between actual memory performance and self-appraisal of memory should not be high; otherwise both constructs would not be distinguishable. This assumption will be checked based on the present data.

4. We expect to see a difference between elderly and younger adults with regards to reactions to the abrupt behavior of interviewers. The expectation is that abrupt behavior will have a greater impact and result in a higher number of changed answers in elderly participants than in younger adults. The rationale behind this expectation is that in cases of lower self-appraisal of memory, the abrupt behavior of the interviewer will have a more pronounced effect on interrogative suggestibility. This is a fair assumption when we consider the distrust of memory that is associated with old age and memory deterioration. Technically, this hypothesis assumes an interaction between age and the behaviors of interviewers.

**Method**

**Participants**

Young adults were recruited from their places of work. Of the 42 young adults who participated in the study, 27 were men and 15 were women. The mean age for the group was 23 years (SD = 2.77, range = 16–29 years). All participants were of white ethnic origin.

Fifty elderly adults were recruited from Cardiology Health Care Centre. The scores of nine elderly adults were dropped from the study, due to low Mini-Mental (Folstein, Folstein, & McHugh, 1975) scores (>26), which can be a sign of mental disability. Thus, scores of 41 elderly participants were analyzed, 26 of whom were men and 15 of whom were women. The mean age was 66.82 years (SD = 2.17, range 64–74 years), the mean score in Mini Mental was 27.9 (SD = 0.5).

All participants (both elderly and young adults) had a high-school education and all participants volunteered to participate in the experiment in order to test their memory performance.

**Materials**

Administration of the GSS (Gudjonsson, 1997; Polish version: Polczyk, 2000) involves first allowing the participants to listen to a short story before asking them to repeat it, giving the index entitled “Immediate recall.” After a 50-min delay, he/she recounts the content of the story again, thus giving the index of Delayed recall, and afterwards he/she is asked 20 questions, 15 of which are subtly misleading (e.g., “Did the boy’s bicycle get damaged when it fell on the ground?” despite the fact that no mention was made in the story of the bicycle falling on the ground). The number of misleading questions answered affirmatively constitutes an index called Yield, which represents the tendency to give answers that are consistent with suggestions embedded in the questions. All participants, regardless of their performance, are then given negative
feedback in the form of two sentences: “You have made a number of errors. It is therefore necessary to go through the questions once more, and this time try to be more accurate” (Gudjonsson, 1997). All the questions are then asked again, and any change to an answer is scored. This gives the Shift index, which represents the tendency to change answers as a result of negative feedback. Two parallel forms of this tool exist (GSS 1 and GSS 2), which differ in the content of the story and the questions. Version 2 was used in this research. The Polish adaptation of GSS 2 has a proven reliability (Cronbach’s alphas: Yield, .74; Shift, .63; Polczyk, 2005).

Memory Assessment Clinics Self-Rating Scale (MAC-S, Crook & Larrabee, 1990; Polish version: Doromoniec, 2003) is a self-rating memory scale designed to assess failures of memory in everyday life. It consists of 21 “ability-to-remember” items and 24 items assessing the frequency of memory failure. Each item is rated on a 5-point Likert scale. Thus, high values on these scales indicate that the participant believes his/her memory to be working well in everyday life. In the study presented herein, the MAC-S was used to assess the participants’ self-appraisal of their memory.

A questionnaire asking for 5-point (1–5) Likert scale ratings on 18 aspects of interviewer manner was used to rate interviewers (with 1 being “not at all” and 5 being “very”). These aspects scored were nervous, severe, friendly, understanding, assertive, confident, professional, firm, respectful, positive, formal, warm, stern, organized, effective, authoritative, competent, and negative.

The Mini-Mental State Examination (MMSE, Folstein et al., 1975) is the most commonly used cognitive test for the elderly adults. It is considered to be indispensable test when screening for cognitive impairment and dementia in various clinical and community settings. It is scored out of 30 (30 being normal) and is used to assess a wide range of cognitive domains, such as orientation, attention, immediate and short-term recall, visual construction, organizational skill, and the ability to follow simple verbal and written commands.

Procedure

This study had a two between-subject factor designs. The factors were interviewer behavior (friendly or abrupt) and age (young adult or old adult). The participants were tested individually. The MMSE was administered before the GSS 2. The 50-min delay between parts of the GSS 2 was filled by participants completing questionnaires that were unrelated to the study. After the GSS 2, the interviewer rater form and the MAC-S were administered. Finally, the participant was debriefed. There were three different experimenters: two of whom were final year students of psychology and one of whom was a student in their third year of PhD in psychology. Every experimenter received 4 hr of training in administering the GSS procedure. There were no significant differences between the experimenters in any dependent variable.

The behavior of the interviewer in the two conditions was in accordance with the description provided by Bain and Baxter (2000). In the friendly condition, the interviewer greeted the participant with a smile and thanked him/her for taking part in the study. The interviewer was friendly and responsive to any attempts at conversation made by the interviewee. The interviewer smiled frequently, adopted a body position of leaning back away from both the table and the participant, and maintained eye contact, except when it was necessary to consult the scoring sheet. In the abrupt condition, the interviewer did not smile and tried not to build any rapport with the participant. The interviewer made minimal responses to participants’ behavior or any attempts to start a conversation, maintained a blank and disinterested facial expression during the interview, was sitting opposite to the participant, and displayed minimal body language.

In all experimental conditions, negative feedback was given in the same clear and firm manner. Each of the three experimenters was assigned a number of participants, half of whom were interviewed in the friendly condition and the other half of whom were interviewed in the abrupt condition.

Results

Manipulation Check of the Friendly and Abrupt Conditions

First, the efficacy of the friendly/abrupt experimental manipulation was checked by means of a series of two-way ANOVA tests on participant ratings of interviewer behavior, with age and interviewer behavior as factors. Analyses revealed that the scores of participants were significantly affected by manipulating the behavior of the interviewer. Participants tested in the friendly condition tended to rate the interviewer as friendly, understanding, respectful, effective, positive, and warm than those in the abrupt condition. Participants tested in the abrupt condition were more likely to rate the interviewer as severe, firm, formal, and negative than those in the friendly condition. Ratings for filler adjectives, not relating to the friendly abrupt dimension, did not differ between both groups (Table 1).

Differences in age were found for the adjectives “formal” ($F[1, 77] = 5.04, p < .037$) and “negative” ($F[1, 77] = 7.73, p < .001$). Whereas elderly adults gave higher ratings than younger ones for “formal,” the reverse was true for the “negative” rating.

The adjective “negative” was the only one that showed a statistically significant interaction between age and interviewer behavior ($F[1, 77] = 11.70, p < .001$). In the abrupt condition, elderly participants gave higher ratings of negativity than younger participants ($p < .001$). In contrast, for the friendly condition, the age groups did not differ from each other ($p = .584$) in terms of the ratings they gave for “negative.”
Mediational Analyses

The analyses presented previously were designed to understand the impact of age and interviewer behavior on interrogative suggestibility and self-appraisal of memory. Additionally, the main hypotheses were expressed as mediation. Therefore, mediational analyses were required that could test the hypothesis that an independent variable influences a dependent variable via one or more mediating variables (Baron & Kenny, 1986). We therefore applied a modification of the mediational analysis proposed by Sobel (1982), which overcomes some of the disadvantages of the classic method. The bootstrapping method was also applied (Preacher & Hayes, 2004).

The following mediational hypotheses were tested: (a) age will affect memory quality, which in turn will affect Yield; (b) age will affect self-appraisal of memory, which in turn will influence Shift; and (c) experimenter behavior will influence the self-appraisal of memory, which will affect Shift. The following predictors were used: age expressed as a continuous variable and interviewer behavior coded as a dichotomy indicator variable (0, friendly; and 1, abrupt).

The results are presented in Table 4. Irrelevant effects were also included, for comparative and exploratory reasons.

The results of mediational analyses were consistent with all three hypotheses. First, the impact of age on Yield (but not on Shift) was mediated by both indices of memory. Second, the impact of age on Shift (but not on Yield) was mediated by self-appraisal of memory. This analysis may raise doubts about the veracity of hypothesis 4, as the relationship of the predictor (age) to the dependent variable (Shift) was statistically insignificant. However, when the analysis was repeated in the abrupt condition, where relationship between age and Shift was significant, the results of the mediational analysis were similar.

Finally, the impact of interviewer behavior on Shift (but not on Yield) was mediated by self-appraisal of memory.

**DISCUSSION**

Preliminary Analyses

The experimental manipulation of interviewer behavior—abrupt versus friendly—proved successful. Accordingly, participants in the abrupt experimental condition perceived the interviewer as more severe, firm, formal, and negative...
than those in the friendly condition. Interviewer behavior in the friendly condition was perceived as more friendly, understanding, respectful, effective, positive, and warm than that in the abrupt condition. These results are comparable with those of Bain and Baxter (2000), Baxter and colleagues (2003), and Bain and colleagues (2004).

**Age and Interrogative Suggestibility**

It was hypothesized that elderly participants would be more likely to yield to suggestive questions than younger participants. This hypothesis was confirmed—the main effect in the ANOVA for age was significant. It was also hypothesized that the mechanism by which age influences the tendency to yield to suggestive questions is connected with memory quality, which decreases with age. If this hypothesis is true, then age should be related to memory quality. This proved to be the case: the results of immediate and delayed recall consistently showed elderly participants to have lower levels of memory quality than younger participants, which is congruent with other well-known findings (Luo & Craik, 2008). Moreover, mediational analyses revealed that the quality of memory was a mediator of the relationship between age and yielding to suggestions embedded in the questions. It is worth noting that there was no such statistically significant mediation for the tendency to change answers after receiving negative feedback. This confirms that different mechanisms are involved in the relationship between age and yielding to suggestions embedded in the questions. It is worth noting that there was no such statistically significant mediation for the tendency to change answers after receiving negative feedback.

The next hypothesis stated that age would be a relevant factor and would have an impact on the tendency of participants to change their answers after negative feedback. The
main effect of age on the Shift index proved insignificant in
the analysis of variance. However, the hypothesized influence
of age was significant when interviewer behavior was
taken into account in the interaction analyses: in the abrupt
condition, elderly participants changed their answers more
often than younger ones, confirming hypothesis 4. No dif-
fferences between the age groups emerged in the friendly
condition.

One possible interpretation of these results is to assume
that abruptness increases uncertainty, which is one of the
three key factors that underlie suggestibility (Gudjonsson
& Clark, 1986). In general, elderly persons tend to be less cer-
tain than younger people, when making subjective assess-
ments of the quality of their own memory (Dodson et al.,
2007), because memory usually deteriorates with age, and
everyday life experiences often expose this deterioration.
It is possible that the abrupt manner of questioning, combined
with negative feedback, substantially raises negative feelings
about the quality of one’s memory and therefore amplifies
the tendency to change answers in order to “improve” one’s
performance. Such mechanisms may be less pronounced in
younger participants who rarely have feelings of insecurity
about their memory and therefore are less likely to feel the
need to confirm its quality. This may explain why elderly
participants change their answers more often than younger
adults only when they are questioned abruptly and not when
conditions are friendly. This interpretation is also supported
by the results that we obtained in relation to the self-appraisal
of memory, as measured by the MAC-S: elderly participants
gave lower ratings of the quality of their own memory than
younger participants, and participants in the abrupt experi-
mental condition also had lower self-appraisal of memory
than those in the friendly experimental condition.

Mediation analyses confirmed that self-appraisal of
memory mediates the relationship between age and shifting
answers—the results were statistically significant in the
whole sample, as well as in the subsample of those who were
interviewed in an abrupt manner. This is important because
the main connection between age and Shift was only statisti-
cally significant for this subsample (i.e., for those in the
abrupt experimental condition). Thus, the postulated medi-
tional hypothesis was confirmed although it would be safer
to assume this only in the case of the abrupt condition. It
should also be mentioned that no significant results emerged
in the analysis of whether self-appraisal of memory was a
mediator between age and yielding to suggestive questions.

In summary, the mediation analyses show that memory
capacity is a mediator of the relationship between age and
the tendency to yield to suggestive questions, but they have
no impact on the relationship between age and tendency to
change answers after negative feedback. On the contrary, self-
appraisal of memory is a mediator of the relationship between
age and the tendency to change answers, but it has no impact
on the relationship between age and the tendency to yield to
suggestive questions. This confirms hypotheses 1 and 2.

**Interviewer Behavior and Interrogative Suggestibility**

The behavior of the interviewer (abrupt vs. friendly) influ-
enced the tendency to change answers after receiving nega-
tive feedback. The participants in the abrupt condition were
more prone to change answers than those in the friendly
condition, regardless of their age. This confirms hypothesis
3. These results are comparable to those obtained in similar
research in which elevated levels of Shift in the abrupt con-
dition were found (Bain & Baxter, 2000; Baxter & Boon,
2000). Thus, the abrupt behavior of the interviewer seems
to increase the impact of negative feedback on the tendency
to change answers. In contrast, we found no significant rela-
tionship between interviewer behavior and the tendency to
yield to suggestive questions.

Our hypothesis also stated that the relationship between
interviewer behavior and shifting answers would be mediated
by self-appraisal of memory. Our findings were consistent
with hypothesis: mediations were statistically significant in
the case of changing answers after receiving negative feedback
but not in the case of yielding to suggestive questions.

**Summary of Results**

The analysis confirmed the following:

1. Memory quality mediates the influence that age has on
the tendency to yield to suggestive questions.
2. Self-appraisal of memory mediates the influence that
age has on the tendency to change answers after receiv-
ing negative feedback.
3. The interviewees’ self-appraisal of their own memory quality mediates the influence that interviewer behavior has on the tendency of interviewees to change their answers after receiving negative feedback.

In summary, it seems that different mechanisms are involved in the relationship between age and interviewer behavior in the case of the two different indices of interrogative suggestibility: the tendency to yield to suggestions included in the questions and the tendency to change answers after negative feedback.

Regardless of the mechanisms, the results obtained in this study clearly indicate that elderly witnesses should not be interviewed in an unfriendly manner as this may increase levels of some aspects of interrogative suggestibility. In fact, in view of the negative impact of abrupt questioning on the tendency of both younger and elderly adults to change their answers, all witnesses should be questioned in a friendly manner.

References


